Preface

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Version 1.0

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Federal Communications Commission (FCC)

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna
- Increase the separation between the equipment and the receiver
- Connect the equipment onto an outlet on a circuit different from that to which the receiver is connected
- Consult the dealer or an experienced radio/TV technician for help

Shielded interconnect cables and a shielded AC power cable must be employed with this equipment to ensure compliance with the pertinent RF emission limits governing this device. Changes or modifications not expressly approved by the system's manufacturer could void the user's authority to operate the equipment.

Declaration of Conformity

This device complies with part 15 of the FCC rules. Operation is subject to the following conditions:

- This device may not cause harmful interference, and
- This device must accept any interference received, including interference that may cause undesired operation

Canadian Department of Communications

This class B digital apparatus meets all requirements of the Canadian Interference-causing Equipment Regulations.

Cet appareil numérique de la classe B respecte toutes les exigences du Réglement sur le matériel brouilieur du Canada.

About the Manual

The manual consists of the following:

Chapter 1

Introducing the Motherboard

Describes features of the motherboard.

Go to ⇨ page 1

Chapter 2

Installing the Motherboard

Describes installation of motherboard components.

Go to ⇨ page 6

Chapter 3

Using BIOS

Provides information on using the BIOS Setup Utility.

Go to ⇨ page 23

Chapter 4

Software Setup

Describes the motherboard software

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Chapter 1
Introducing the Motherboard

Introduction

Thank you for choosing the PXP43 motherboard. This motherboard is a high performance, enhanced function motherboard designed to support the LGA775 socket Intel® Yorkfield/Wolfdale processors for high-end business or personal desktop markets.

The motherboard incorporates the Intel Eaglelake P43 Northbridge (NB) and Intel ICH10 Southbridge (SB) chipsets. The Northbridge supports a Front Side Bus (FSB) frequency of 1333/1066/800 MHz using a scalable FSB Vcc_CPU. The memory controller supports DDR2 memory DIMM frequencies of 800/667. It supports four DDR2 sockets with maximum memory size of 16 GB. DDR2 memory bandwidth of 12.8 GB/s in dual-channel symmetric mode assuming DDR2 800 MHz. High resolution graphics via one PCI Express x16 slot, intended for Graphics Interface, is fully compliant to the PCI Express Base Specification Revision 2.0.

The ICH10 Southbridge supports two PCI slots which are PCI v2.3 compliant. In addition, three PCI Express x1 slots are supported, fully compliant to the PCI Express Base Specification, Revision 1.1. It implements an EHCI compliant interface that provides 480 Mb/s bandwidth for twelve USB 2.0 ports (four USB ports and four USB 2.0 headers support additional eight USB ports). One onboard IDE connector supports two IDE devices in Ultra ATA 133/100/66/33 mode. The Southbridge supports six SATA ports with maximum transfer rate up to 3.0 Gb/s each.

There is an advanced full set of I/O ports in the rear panel, including PS/2 mouse and keyboard connectors, COM, four USB ports, one LAN port and audio jacks for microphone, line-in and 6-ch line-out.

Feature

Processor

This motherboard uses an LGA775 type of Intel® Yorkfield/Wolfdale that carries the following features:

- Accommodates Intel® Yorkfield/Wolfdale processors
- Supports a system bus (FSB) of 1333/1066/800 MHz

Chipset

The P43 Northbridge (NB) and ICH10 Southbridge (SB) chipsets are based on an innovative and scalable architecture with proven reliability and performance.

P43 (NB)

- Supports 36-bit host bus addressing, allowing the CPU to access the entire 64 GB of the memory address space.
- 2 GB/s point-to-point Direct Media Interface (DMI) to ICH10 (1 GB/s each direction)
- One, 16-lane PCI Express x16 port for Graphics Attach, compliant to the PCI Express Base Specification revision 2.0
- Supports 512-Mb and 1-Gb DDR2 and 512-Mb, 1-Gb,and 2-Gb DDR3 DRAM technologies for x8 and x16 devices

ICH10 (SB)

- Enhanced DMA Controller, interrupt controller, and timer functions
- Compliant with PCI Express Base Specification, revision 1.1
- Compliant with PCI v2.3 specificaiton
- Compliant with SATA 3.0 Gb/s Host Controller
- Integrated USB 2.0 Host Controller supporting up to twelve USB 2.0 ports

Memory

- Supports DDR2 800/667 DDR2 SDRAM with Dual-channel architecture
- Accommodates four unbuffered DIMMs
- Up to 4 GB per DIMM with maximum memory size up to 16 GB

Audio (Realtek 6CH Audio ALC662 Codec)

- 5.1 Channel High Definition Audio Codec
- ADCs supports 44.1k/48k/96kHz sample rate
- Meets Microsoft WLP 3.08 Vista premium and mobile PCs audio requirements
- Direct Sound 3D™ compatible

Onboard LAN (Atheros AR8121 PCI-E Gbit LAN)

- Integrated PHY for 10/100/1000 Mbps
- IEEE 802.3x compliant flow control support
- Three power supplies: 2.5V, 1.8V and 1.2V
- PCI Express base 1.1 compliant

Expansion Options

The motherboard comes with the following expansion options:

- One PCI Express x16 slot for Graphics Interface
- Three PCI Express x1 slots
- Two 32-bit PCI v2.3 compliant slots
- One IDE connector supporting up to two IDE devices
- Six 7-pin SATA connectors

This motherboard supports Ultra DMA bus mastering with transfer rates of 133/ 100/66/33 Mb/s.

Integrated I/O

The motherboard has a full set of I/O ports and connectors:

- Two PS/2 ports for mouse and keyboard
- One Serial port
- Four USB ports
- One LAN port
- Audio jacks for microphone, line-in and 6-ch line-out

BIOS Firmware

The motherboard uses AMI BIOS that enables users to configure many system features including the following:

- Power management
- Wake-up alarms
- CPU parameters
- CPU and memory timing

The firmware can also be used to set parameters for different processor clock speeds.

1. Some hardware specifications and software items are subject to change without prior notice.

2. Due to chipset limitation, we recommend that motherboard be operated in the ambiance between 0 and 50 °C.

Motherboard Components

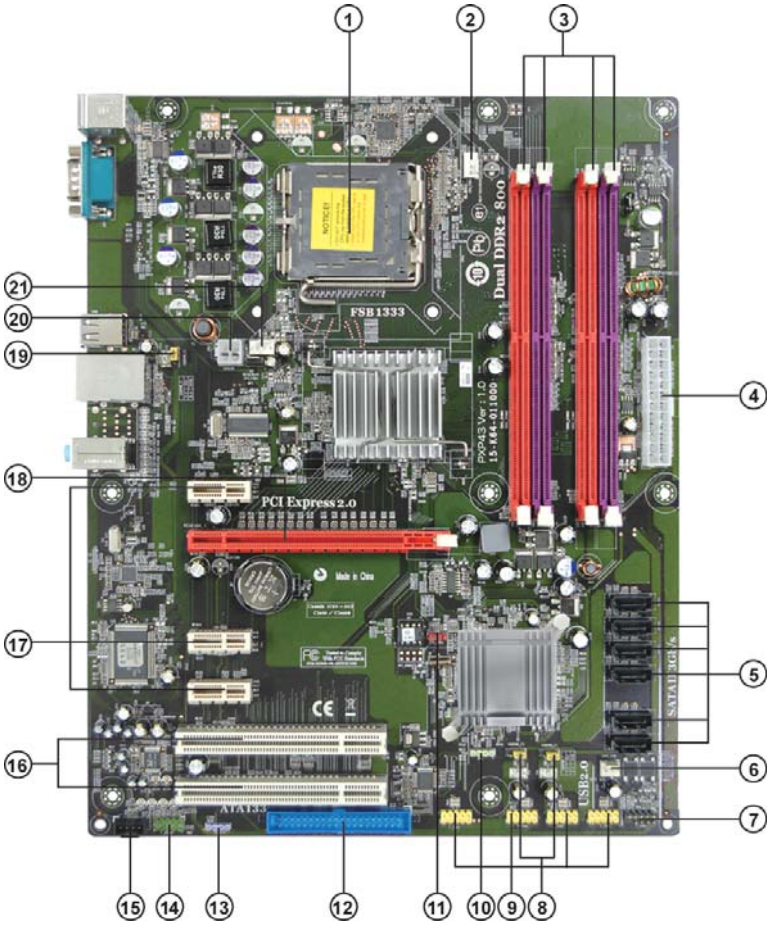


Table of Motherboard Components

LABEL	COMPONENTS
1. CPU Socket	LGA775 socket Intel® Yorkfield/Wolfdale Family processors
2. CPU_FAN1	CPU cooling fan connector
3. DDR2_DIMM1~4	240-pin DDR2 SDRAM slots
4. ATX_POWER	Standard 24-Pin ATX Power connector
5. SATA1~6	Serial ATA connectors
6. CASE_FAN	Case cooling fan connector
7. F_PANEL	Front Panel Switch/LED header
8. USBPWR_F1~2	Front Panel USB Power Select jumpers
9. F_USB1~4	Front Panel USB headers
10. SPK	Speaker header
11. CLR_CMOS	Clear CMOS jumper
12. IDE	Primary IDE connector
13. SPDIFO	SPDIF out header
14. F_AUDIO	Front Panel Audio header
15. CD_IN	Analog Audio Input connector
16. PCI2~3	32-bit add-on card slots
17. PCIE1~3	PCI Express x1 slots
18. PCIE16X_1	PCI Express x16 graphics card slot
19. USBPWR_R1	Rear Panel USB/PS2 Power Select jumper
20. ATX12V	4-pin +12V power connector
21. SYS_FAN1	System cooling fan connector

This concludes Chapter 1. The next chapter explains how to install the motherboard.

Chapter 2
Installing the Motherboard

Safety Precautions

- Follow these safety precautions when installing the motherboard
- Wear a grounding strap attached to a grounded device to avoid damage from static electricity
- Discharge static electricity by touching the metal case of a safely grounded object before working on the motherboard
- Leave components in the static-proof bags they came in
- Hold all circuit boards by the edges. Do not bend circuit boards

Choosing a Computer Case

There are many types of computer cases on the market. The motherboard complies with the specifications for the FULL ATX system case. Firstly, some features on the motherboard are implemented by cabling connectors on the motherboard to indicators and switches on the system case. Make sure that your case supports all the features required. Secondly, this motherboard supports two enhanced IDE drives. Make sure that your case has sufficient power and space for all drives that you intend to install.

Most cases have a choice of I/O templates in the rear panel. Make sure that the I/O template in the case matches the I/O ports installed on the rear edge of the motherboard.

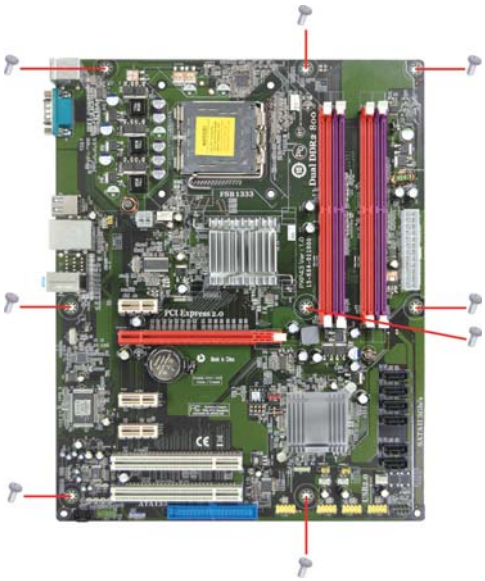
This motherboard carries a FULL ATX form factor of 305 x 244 mm. Choose a case that accommodates this form factor.

Installing the Motherboard in a Case

Refer to the following illustration and instructions for installing the motherboard in a case.

Most system cases have mounting brackets installed in the case, which correspond the holes in the motherboard. Place the motherboard over the mounting brackets and secure the motherboard onto the mounting brackets with screws.

Ensure that your case has an I/O template that supports the I/O ports and expansion slots on your motherboard.



Do not over-tighten the screws as this can stress the motherboard.

Checking Jumper Settings

This section explains how to set jumpers for correct configuration of the motherboard.

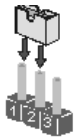
Setting Jumpers

Use the motherboard jumpers to set system configuration options. Jumpers with more than one pin are numbered. When setting the jumpers, ensure that the jumper caps are placed on the correct pins.

The illustrations show a 2-pin jumper. When the jumper cap is placed on both pins, the jumper is SHORT. If you remove the jumper cap, or place the jumper cap on just one pin, the jumper is OPEN.

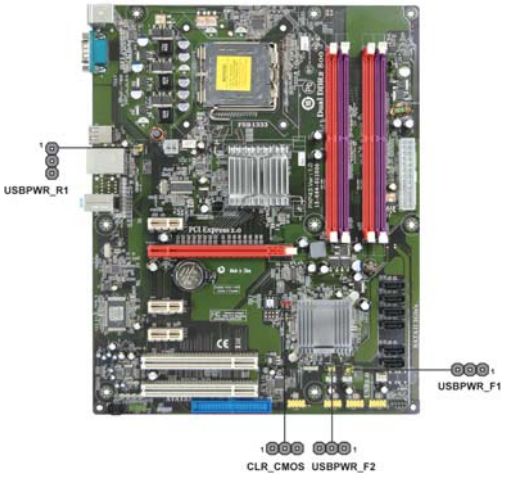
SHORT **OPEN**

This illustration shows a 3-pin jumper. Pins 1 and 2 are SHORT



Checking Jumper Settings

The following illustration shows the location of the motherboard jumpers. Pin 1 is labeled.



Jumper Settings

Jumper	Type	Description	Setting (default)	
CLR_CMOS	3-pin	CLEAR CMOS	1-2: NORMAL 2-3: CLEAR Before clearing the CMOS, make sure to turn the system off.	 1 **CLR_CMOS**
USBPWR_R1	3-pin	Rear USB/PS2 Power Select Jumper	1-2: VCC 2-3: 5VSB	1 **USBPWR_R1**
USBPWR_F1~2	3-pin	Front Panel USB Power Select Jumper	1-2: VCC 2-3: 5VSB	 1 **USBPWR_F1~2**

1. *To avoid the system instability after clearing CMOS, we recommend users to enter the main BIOS setting page to "Load Optimized Defaults" and then "Save & Exit Setup".*
2. *Make sure the power supply provides enough 5VSB voltage before selecting the 5VSB function.*
3. *It is required that users place the USBPWR_F1~2 & USBPWR_R1 cap onto 2-3 pin rather than 1-2 pin as default if you want to wake up the computer by USB/PS2 KB/Mouse.*

Installing Hardware

Installing the Processor

Caution: When installing a CPU heatsink and cooling fan make sure that you DO NOT scratch the motherboard or any of the surface-mount resistors with the clip of the cooling fan. If the clip of the cooling fan scrapes across the motherboard, you may cause serious damage to the motherboard or its components.

On most motherboards, there are small surface-mount resistors near the processor socket, which may be damaged if the cooling fan is carelessly installed.

Avoid using cooling fans with sharp edges on the fan casing and the clips. Also, install the cooling fan in a well-lit work area so that you can clearly see the motherboard and processor socket.

Before installing the Processor

This motherboard automatically determines the CPU clock frequency and system bus frequency for the processor. You may be able to change the settings in the system Setup Utility. We strongly recommend that you do not over-clock processors or other components to run faster than their rated speed.

Warning:

1. Over-clocking components can adversely affect the reliability of the system and introduce errors into your system. Over-clocking can permanently damage the motherboard by generating excess heat in components that are run beyond the rated limits.

2. Always remove the AC power by unplugging the power cord from the power outlet before installing or removing the motherboard or other hardware components.

This motherboard has an LGA775 socket. When choosing a processor, consider the performance requirements of the system. Performance is based on the processor design, the clock speed and system bus frequency of the processor, and the quantity of internal cache memory and external cache memory.

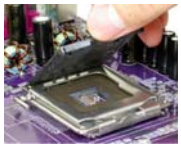
CPU Installation Procedure

The following illustration shows CPU installation components.

A. Read and follow the instructions shown on the sticker on the CPU cap.

B. Unload the cap
- Use thumb & forefinger to hold the lifting tab of the cap.
- Lift the cap up and remove the cap completely from the socket.

C. Open the load plate
- Use thumb & forefinger to hold the hook of the lever, pushing down and pulling aside unlock it.
- Lift up the lever.
- Use thumb to open the load plate. Be careful not to touch the contacts.



D. Install the CPU on the socket
- Orientate CPU package to the socket. Make sure you match triangle marker to pin 1 location.

E. Close the load plate
- Slightly push down the load plate onto the tongue side, and hook the lever.
- CPU is locked completely.

F. Apply thermal grease on top of the CPU.

G. Fasten the cooling fan supporting base onto the CPU socket on the motherboard.

H. Make sure the CPU fan is plugged to the CPU fan connector. Please refer to the CPU cooling fan user's manual for more detail installation procedure.

1. To achieve better airflow rates and heat dissipation, we suggest that you use a high quality fan with 3800 rpm at least. CPU fan and heatsink installation procedures may vary with the type of CPU fan/ heatsink supplied. The form and size of fan/heatsink may also vary.

2. DO NOT remove the CPU cap from the socket before installing a CPU.

3. Return Material Authorization (RMA) requests will be accepted only if the motherboard comes with the cap on the LGA775 socket.

Installing Memory Modules

This motherboard accommodates four memory modules. It can support four 240-pin DDR2 800/667. The total memory capacity is 16 GB.

DDR2 SDRAM memory module table

Memory module	Memory Bus
DDR2 667	*333 MHz*
DDR2 800	*400 MHz*

You must install at least one module in any of the four slots. Each module can be installed with 4 GB of memory; total memory capacity is 16 GB.

Do not remove any memory module from its antistatic packaging until you are ready to install it on the motherboard. Handle the modules only by their edges. Do not touch the components or metal parts. Always wear a grounding strap when you handle the modules.

Installation Procedure

Refer to the following to install the memory modules.

1. This motherboard supports unbuffered DDR2 SDRAM only.
2. Push the latches on each side of the DIMM slot down.
3. Align the memory module with the slot. The DIMM slots are keyed with notches and the DIMMs are keyed with cutouts so that they can only be installed correctly.
4. Check that the cutouts on the DIMM module edge connector match the notches in the DIMM slot.
5. Install the DIMM module into the slot and press it firmly down until it seats correctly. The slot latches are levered upwards and latch on to the edges of the DIMM.
6. Install any remaining DIMM modules.

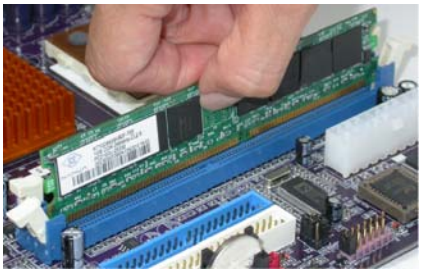


Table A: DDR2 (memory module) QVL (Qualified Vendor List)

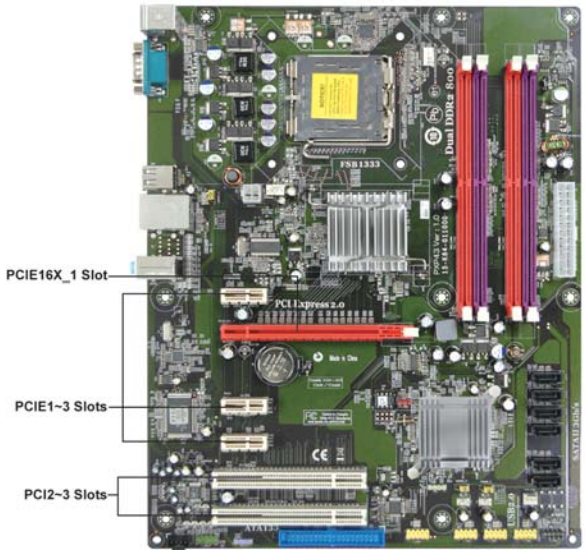
The following DDR2 800/667 memory modules have been tested and qualified for use with this motherboard.

Type	Size	Vendor	Module Name
DDR2 667	512 MB	A-DATA	AD29608A88-3EG
			M2OAD5G3H3166I1C52
		Apacer	78.91G92.9K5
		APOGEE	AU51082-667P005
		Corsair	64M8CFE PS1000545
		Infinity	0547W64M8 PC5300
		Micron	MT4HTF6464AY-667E1
		PSC	AL6E8E63J-6E1
		Samsung	K4T51083QC
		Twinmos	8D23JK-TT
			TMM6208G8M30B
	1 GB	A-DATA	M2OAD5G3I4176I1C52
		Apacer	78.01G9O.9K5
			Elpida 1GB AM4B5708GEWS7E-0637F
		APOGEE	AU1G082-667P005
		Infineon	HYB18T512800BF3S
		Micron	MT8HTF12864AY-667E1
		PSC	AL7E8E63B-6E1T
			AL7E8E63J-6E1
			AL7E8F73C-6E1
		Twinmos	8D23KK-TT
	2 GB	Aeneon	AET860UD00-30DB08X
		Apacer	78.A1G9O.9K4
		Hynix	HYMP125U64AP8-Y5-AB-A
		Lead Max	Lead Max LD5PS1G831
		PSC	AL8E8F73C-6E1
		Qimonda	HYS64T256020EU-3S-C2
DDR2 800	512 MB	A-DATA	M2OAD6G3H3160I1E53
		Infinity	04751208CZ5U2D
		Kingston	KHX6400D2ULK2/1G
			KVR800D2N5/512
		Micron	MT8HTF6464AY-80ED4
		UMAX	U2S12D30TP-8E
	1 GB	Aeneon	AET760UD00-25DC08X
		Apacer	78.01GA0.9K5
		Infinity	04701G16CZ5U2G
		Kingston	KHX6400D2ULK2/2G
			KVR800D2N5/1G
	2 GB	Aeneon	AET860UD00-25DC08X
		Apacer	78.A1GA0.9K4
		Micron	MT16HTF25664AY-800E1
		PSC	AL8E8F73C-8E1
		Qimonda	HYS64T256020EU-25F-C2

Expansion Slots

Installing Add-on Cards

The slots on this motherboard are designed to hold expansion cards and connect them to the system bus. Expansion slots are a means of adding or enhancing the motherboard's features and capabilities. With these efficient facilities, you can increase the motherboard's capabilities by adding hardware that performs tasks that are not part of the basic system.



PCIEX16_1 Slot The PCI Express x16 slot is used to install the external PCI Express graphics cards that are fully compliant to the PCI Express Base Specification Revision 2.0.

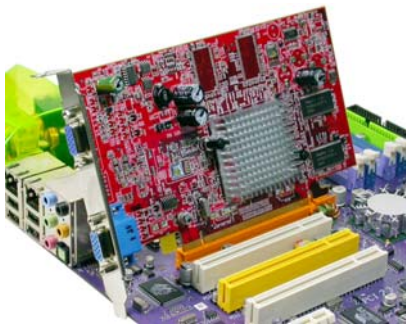
PCIE1~3 Slots The PCI Express x1 slots are fully compliant to the PCI Express Base Specification Revision 1.1.

PCI2~3 Slots This motherboard is equipped with two standard PCI slots. PCI stands for Peripheral Component Interconnect and is a bus standard for expansion cards, which for the most part, is a supplement of the older ISA bus standard. The PCI slots on this board are PCI v2.3 compliant.

Before installing an add-on card, check the documentation for the card carefully. If the card is not Plug and Play, you may have to manually configure the card before installation.

Follow these instructions to install an add-on card:

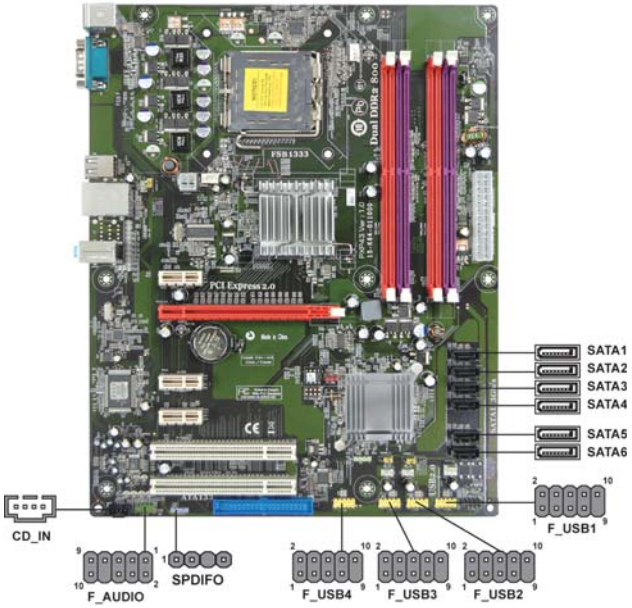
1 Remove a blanking plate from the system case corresponding to the slot you are going to use.
2 Install the edge connector of the add-on card into the expansion slot. Ensure that the edge connector is correctly seated in the slot.
3 Secure the metal bracket of the card to the system case with a screw.



For some add-on cards, for example graphics adapters and network adapters, you have to install drivers and software before you can begin using the add-on card.

Connecting Optional Devices

Refer to the following for information on connecting the motherboard optional devices



F_AUDIO: Front Panel Audio header

This header allows the user to install auxiliary front-oriented microphone and line-out ports for easier access.

Pin	Signal Name	Pin	Signal Name
1	PORT 1L	2	AUD_GND
3	PORT 1R	4	PRESENCE#
5	PORT 2R	6	SENSE1_RETURN
7	SENSE_SEND	8	KEY
9	PORT 2L	10	SENSE2_RETURN

SPDIFO: SPDIF out header

This is an optional header that provides an S/PDIF (Sony/Philips Digital Interface) output to digital multimedia device through optical fiber or coaxial connector.

Pin	Signal Name	Function
1	SPDIF	SPDIF digital output
2	+5VA	5V analog Power
3	Key	No pin
4	GND	Ground

F_USB1~4: Front Panel USB headers

The motherboard has four USB ports installed on the rear edge I/O port array. Additionally, some computer cases have USB ports at the front of the case. If you have this kind of case, use auxiliary USB connector to connect the front-mounted ports to the motherboard.

Pin	Signal Name	Function
1	USBPWR	Front Panel USB Power
2	USBPWR	Front Panel USB Power
3	USB_FP_P0-	USB Port 0 Negative Signal
4	USB_FP_P1-	USB Port 1 Negative Signal
5	USB_FP_P0+	USB Port 0 Positive Signal
6	USB_FP_P1+	USB Port 1 Positive Signal
7	GND	Ground
8	GND	Ground
9	Key	No pin
10	NC	Not connected

Please make sure that the USB cable has the same pin assignment as indicated above. A different pin assignment may cause damage or system hang-up.

SATA1~6: Serial ATA connectors

These connectors are used to support the new Serial ATA devices for the highest date transfer rates (3.0 Gb/s), simpler disk drive cabling and easier PC assembly. It eliminates limitations of the current Parallel ATA interface. But maintains register compatibility and software compatibility with Parallel ATA.

Pin	Signal Name	Pin	Signal Name
1	Ground	2	TX+
3	TX-	4	Ground
5	RX-	6	RX+
7	Ground	-	-

CD_IN: Analog Audio Input connector

Pin	Signal Name	Function
1	CD_L	CD In left channel
2	GND	Ground
3	GND	Ground
4	CD_R	CD In right channel

Installing a Hard Disk Drive/CD-ROM/SATA Hard Drive

This section describes how to install IDE devices such as a hard disk drive and a CD-ROM drive.

About IDE Devices

Your motherboard has one IDE interface. An IDE ribbon cable supporting two IDE devices is bundled with the motherboard.

You must orient the cable connector so that the pin1 (color) edge of the cable corresponds to the pin 1 of the I/O port connector.

IDE: IDE Connector

This motherboard supports six high data transfer SATA ports with each runs up to 3.0 Gb/s. To get better system performance, we recommend users connect the CD-ROM to the IDE channel, and set up the hard drives on the SATA ports.

IDE devices enclose jumpers or switches used to set the IDE device as MASTER or SLAVE. Refer to the IDE device user's manual. Installing two IDE devices on one cable, ensure that one device is set to MASTER and the other device is set to SLAVE. The documentation of your IDE device explains how to do this.

About SATA Connectors

Your motherboard features six SATA connectors supporting a total of six drives. SATA refers to Serial ATA (Advanced Technology Attachment) is the standard interface for the IDE hard drives which are currently used in most PCs. These connectors are well designed and will only fit in one orientation. Locate the SATA connectors on the motherboard and follow the illustration below to install the SATA hard drives.

Installing Serial ATA Hard Drives

To install the Serial ATA (SATA) hard drives, use the SATA cable that supports the Serial ATA protocol. This SATA cable comes with a SATA power cable. You can connect either end of the SATA cable to the SATA hard drive or the connector on the motherboard.

SATA cable (optional)

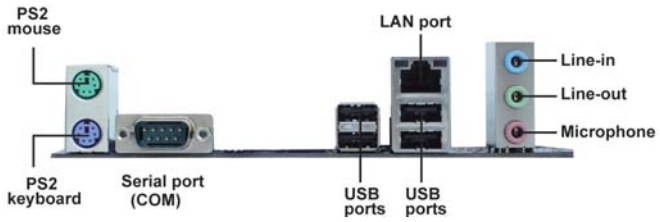
SATA power cable (optional)

1 Attach either cable end to the connector on the motherboard.
2 Attach the other cable end to the SATA hard drive.
3 Attach the SATA power cable to the SATA hard drive and connect the other end to the power supply.

This motherboard does not support the "Hot-Plug" function.

Connecting I/O Devices

The backplane of the motherboard has the following I/O ports:



PS2 Mouse Use the upper PS/2 port to connect a PS/2 pointing device.

PS2 Keyboard Use the lower PS/2 port to connect a PS/2 keyboard.

Serial Port (COM) Use the COM port to connect serial devices such as mice or fax/modems.

USB Ports Use the USB ports to connect USB devices.

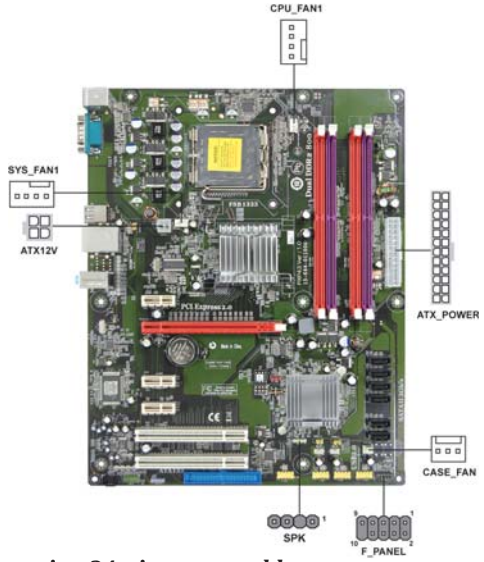
LAN Port Connect an RJ-45 jack to the LAN port to connect your computer to the network.

Audio Ports Use the three audio ports to connect audio devices. The first jack is for stereo line-in signal.The second jack is for stereo line-out singal. The third jack is for microphone.

Connecting Case Components

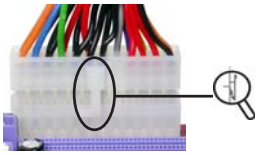
After you have installed the motherboard into a case, you can begin connecting the motherboard components. Refer to the following:

1 Connect the CPU cooling fan cable to **CPU_FAN1**.
2 Connect the system cooling fan connector to **SYS_FAN1**.
3 Connect the case cooling fan connector to **CASE_FAN**.
4 Connect the standard power supply connector to **ATX_POWER**.
5 Connect the auxiliary case power supply connector to **ATX12V**.
6 Connect the case switches and indicator LEDs to the **F_PANEL**.
7 Connec the case speaker cable to **SPK**.



1. Connecting 24-pin power cable

The ATX 24-pin connector allows you to connect to ATX v2.x power supply.

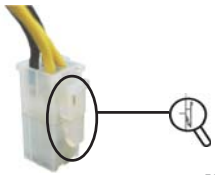


With ATX v2.x power supply, users please note that when installing 24-pin power cable, the latches of power cable and the ATX_POWER match perfectly.

24-pin power cable

2. Connecting 4-pin power cable

The ATX12V power connector is used to provide power to the CPU.



When installing 4-pin power cable, the latches of power cable and the ATX12V match perfectly.

CPU_FAN1/SYS_FAN1: Cooling FAN Power Connector

Pin	Signal Name	Function
1	GND	System Ground
2	+12V	Power +12V
3	Sense	Sensor
4	Control	CPU FAN control

Users please note that the fan connector supports the CPU cooling fan of 1.1A ~ 2.2A (26.4W max) at +12V.

CASE_FAN: Case cooling FAN Power Connector

Pin	Signal Name	Function
1	GND	System Ground
2	+12V	Power +12V
3	Sense	Sensor

ATX_POWER: ATX 24-pin Power Connector

Pin	Signal Name	Pin	Signal Name
1	+3.3V	13	+3.3V
2	+3.3V	14	-12V
3	Ground	15	Ground
4	+5V	16	PS_ON
5	Ground	17	Ground
6	+5V	18	Ground
7	Ground	19	Ground
8	PWRGD	20	-5V
9	+5VSB	21	+5V
10	+12V	22	+5V
11	+12V	23	+5V
12	+3.3V	24	Ground

ATX12V: ATX 12V Power Connector

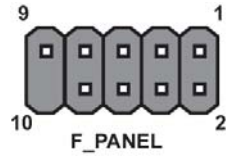
Pin	Signal Name
1	Ground
2	Ground
3	+12V
4	+12V

SPK: Internal speaker header

Pin	Signal Name
1	VCC
2	Key
3	GND
4	Signal

Front Panel Header

The front panel header (F_PANEL) provides a standard set of switch and LED headers commonly found on ATX or Micr ATX cases. Refer to the table below for information:



Pin	Signal	Function	Pin	Signal	Function
1	HD_LED_P	Hard disk LED (+)	2	FP PWR/SLP	*MSG LED (+)
3	HD_LED_N	Hard disk LED (-)	4	FP PWR/SLP	*MSG LED (-)
5	RST_SW_N	Reset Switch (-)	6	PWR_SW_P	Power Switch (+)
7	RST_SW_P	Reset Switch (+)	8	PWR_SW_N	Power Switch (-)
9	RSVD	Reserved	10	Key	No pin

***** *MSG LED (dual color or single color)*

Hard Drive Activity LED

Connecting pins 1 and 3 to a front panel mounted LED provides visual indication that data is being read from or written to the hard drive. For the LED to function properly, an IDE drive should be connected to the onboard IDE interface. The LED will also show activity for devices connected to the SCSI (hard drive activity LED) connector.

Power/Sleep/Message waiting LED

Connecting pins 2 and 4 to a single or dual-color, front panel mounted LED provides power on/off, sleep, and message waiting indication.

Reset Switch

Supporting the reset function requires connecting pin 5 and 7 to a momentary-contact switch that is normally open. When the switch is closed, the board resets and runs POST.

Power Switch

Supporting the power on/off function requires connecting pins 6 and 8 to a momentary-contact switch that is normally open. The switch should maintain contact for at least 50 ms to signal the power supply to switch on or off. The time requirement is due to internal de-bounce circuitry. After receiving a power on/off signal, at least two seconds elapses before the power supply recognizes another on/off signal.

This concludes Chapter 2. The next chapter covers the BIOS.

Chapter 3
Using BIOS

About the Setup Utility

The computer uses the latest "American Megatrends Inc. " BIOS with support for Windows Plug and Play. The CMOS chip on the motherboard contains the ROM setup instructions for configuring the motherboard BIOS.

The BIOS (Basic Input and Output System) Setup Utility displays the system's configuration status and provides you with options to set system parameters. The parameters are stored in battery-backed-up CMOS RAM that saves this information when the power is turned off. When the system is turned back on, the system is configured with the values you stored in CMOS.

The BIOS Setup Utility enables you to configure:

- Hard drives, diskette drives and peripherals
- Video display type and display options
- Password protection from unauthorized use
- Power Management features

The settings made in the Setup Utility affect how the computer performs. Before using the Setup Utility, ensure that you understand the Setup Utility options.

This chapter provides explanations for Setup Utility options.

The Standard Configuration

A standard configuration has already been set in the Setup Utility. However, we recommend that you read this chapter in case you need to make any changes in the future.

This Setup Utility should be used:

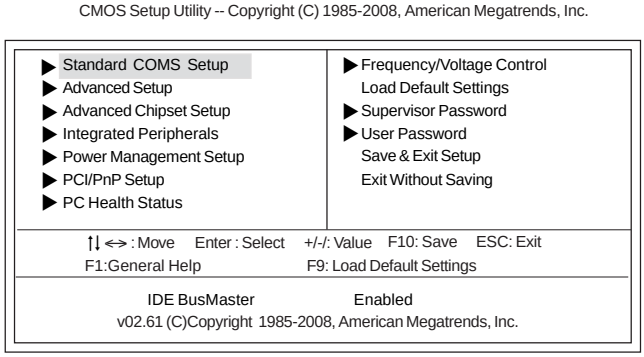
- when changing the system configuration
- when a configuration error is detected and you are prompted to make changes to the Setup Utility
- when trying to resolve IRQ conflicts
- when making changes to the Power Management configuration
- when changing the password or making other changes to the Security Setup

Entering the Setup Utility

When you power on the system, BIOS enters the Power-On Self Test (POST) routines. POST is a series of built-in diagnostics performed by the BIOS. After the POST routines are completed, the following message appears:

Press DEL to enter SETUP

Press the delete key to access the BIOS Setup Utility.


CMOS Setup Utility -- Copyright (C) 1985-2008, American Megatrends, Inc.
▶ Standard COMS Setup
▶ Advanced Setup
▶ Advanced Chipset Setup
▶ Integrated Peripherals
▶ Power Management Setup
▶ PCI/PnP Setup
▶ PC Health Status
▶ Frequency/Voltage Control
Load Default Settings
▶ Supervisor Password
▶ User Password
Save & Exit Setup
Exit Without Saving
↑↓ <-> : Move Enter : Select +/-/: Value F10: Save ESC: Exit
F1:General Help F9: Load Default Settings
IDE BusMaster Enabled
v02.61 (C)Copyright 1985-2008, American Megatrends, Inc.

BIOS Navigation Keys

The BIOS navigation keys are listed below:

KEY	FUNCTION
ESC	Exits the current menu
↑↓ <->	Scrolls through the items on a menu
+/-/PU/PD	Modifies the selected field's values
Enter	Select
F9	Load a default optimized setting
F10	Saves the current configuration and exits setup
F1	Displays a screen that describes all key functions

Updating the BIOS

You can download and install updated BIOS for this motherboard from the manufacturer's Web site. New BIOS provides support for new peripherals, improvements in performance, or fixes for known bugs. Install new BIOS as follows:

1. If your motherboard has a BIOS protection jumper, change the setting to allow BIOS flashing.
2. If your motherboard has an item called Firmware Write Protect in Advanced BIOS features, disable it. (Firmware Write Protect prevents BIOS from being overwritten.)
3. Create a bootable system disk. (Refer to Windows online help for information on creating a bootable system disk.)
4. Download the Flash Utility and new BIOS file from the manufacturer's Web site. Copy these files to the system diskette you created in Step 1.
5. Turn off your computer and insert the system diskette in your computer's diskette drive.
6. At the A:\ prompt, type the Flash Utility program name and the file name of the new bios and then press <Enter>. Example: AMINF340.EXE 040706.ROM
7. When the installation is complete,restart your computer. If your motherboard has a Flash BIOS jumper, reset the jumper to protect the newly installed BIOS from being overwritten. The computer will restart automatically.

Using BIOS

When you start the Setup Utility, the main menu appears. The main menu of the Setup Utility displays a list of the options that are available. A highlight indicates which option is currently selected. Use the cursor arrow keys to move the highlight to other options. When an option is highlighted, execute the option by pressing <Enter>.

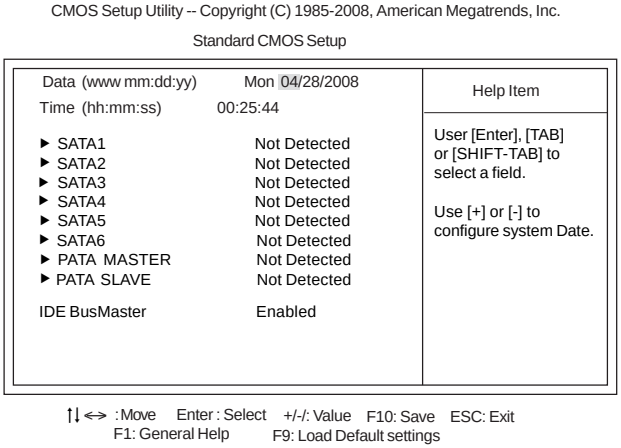
Some options lead to pop-up dialog boxes that prompt you to verify that you wish to execute that option. Other options lead to dialog boxes that prompt you for information.

Some options (marked with a triangle ▶) lead to submenus that enable you to change the values for the option. Use the cursor arrow keys to scroll through the items in the submenu.

In this manual, default values are enclosed in parenthesis. Submenu items are denoted by a triangle ▶.

Standard CMOS Setup

This option displays basic information about your system.

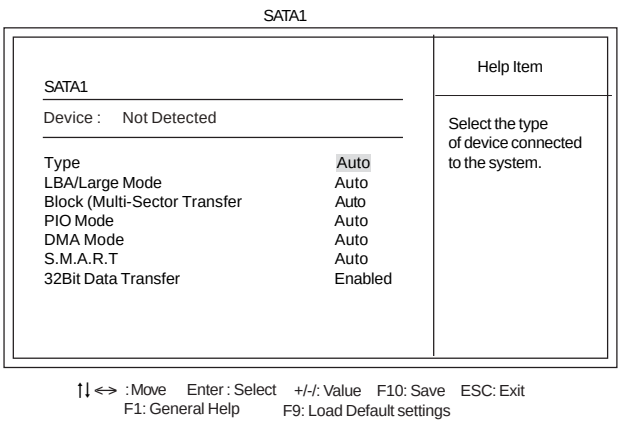

CMOS Setup Utility -- Copyright (C) 1985-2008, American Megatrends, Inc.
Standard CMOS Setup
Data (www mm:dd:yy) Mon 04/28/2008
Time (hh:mm:ss) 00:25:44
► SATA1 Not Detected
► SATA2 Not Detected
► SATA3 Not Detected
► SATA4 Not Detected
► SATA5 Not Detected
► SATA6 Not Detected
► PATA MASTER Not Detected
► PATA SLAVE Not Detected
IDE BusMaster Enabled
Help Item
User [Enter], [TAB] or [SHIFT-TAB] to select a field.
Use [+] or [-] to configure system Date.
↑↓<-> :Move Enter : Select +/-/: Value F10: Save ESC: Exit
F1: General Help F9: Load Default settings

Date & Time

The Date and Time items show the current date and time on the computer. If you are running a Windows OS, these items are automatically updated whenever you make changes to the Windows Date and Time Properties utility.

► SATA1~6/PATA MASTER/SLAVE

This motherboard supports six SATA channels and each channel allows one SATA device to be installed. Use these items to configure each device on the SATA channel.


CMOS SETUP UTILITY - Copyright (C) 1985-2008, American Megatrends, Inc.
SATA1
SATA1
Device : Not Detected
Type Auto
LBA/Large Mode Auto
Block (Multi-Sector Transfer Auto
PIO Mode Auto
DMA Mode Auto
S.M.A.R.T Auto
32Bit Data Transfer Enabled
Help Item
Select the type of device connected to the system.
↑↓<-> :Move Enter : Select +/-/: Value F10: Save ESC: Exit
F1: General Help F9: Load Default settings

Type (Auto)

Use this item to configure the type of the IDE device that you specify. If the feature is enabled, it will enhance hard disk performance by reading or writing more data during each transfer.

LBA/Large Mode (Auto)

Use this item to set the LAB/Large mode to enhance hard disk performance by optimizing the area the hard disk is visited each time.

Block (Multi-Sector Transfer (Auto)

If the feature is enabled, it will enhance hard disk performance by reading or writing more data during each transfer.

PIO Mode (Auto)

Use this item to set the PIO mode to enhance hard disk performance by optimizing the hard disk timing.

DMA Mode (Auto)

DMA capability allows user to improve the transfer-speed and data-integrity for compatible IDE devices.

S.M.A.R.T. (Auto)

The S.M.A.R.T. (Self-Monitoring, Analysis and Reporting Technology) system is a diagnostics technology that monitors and predicts device performance. S.M.A.R.T. software resides on both the disk drive and the host computer.

32Bit Data Transfer (Enabled)

Use this item to set the onboard SATA-IDE channel to be disabled, IDE, or RAID.

Press <Esc> to return to the Standard CMOS Setup page.

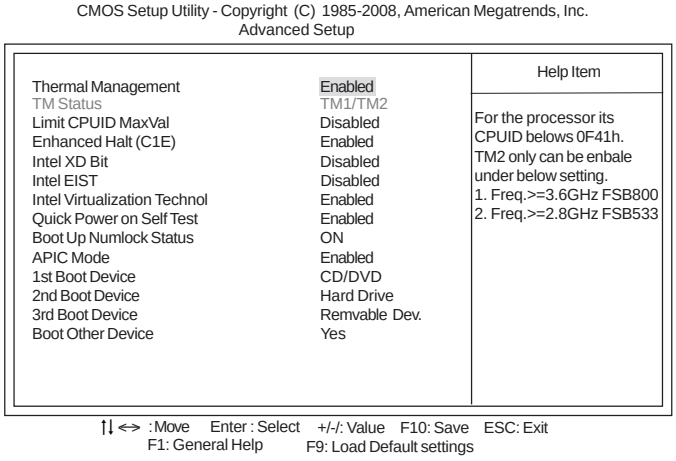
IDE BusMaster (Enabled)

This item enables or disables the DMA under DOS mode. We recommend you to leave this item at the default value.

Press <Esc> to return to the main menu setting page.

Advanced Setup

This page sets up more advanced information about your system. Handle this page with caution. Any changes can affect the operation of your computer.



Thermal Management (Enabled)
This item displays CPU temperature and enables you to set a safe temperature to Prescott CPU.

TM Status (TM1/TM2)
This item displays CPU Monitor status.

Limit CPUID MaxVal (Disabled)
Use this item to enable or disable the Max CPU ID value limit. When suppports Prescott and LGA775 CPUs, enables this to prevent the system from "rebooting" when trying to install Windows NT 4.0.

Enhanced Halt (C1E) (Enabled)
This item enables or disables enhanced halt.

Intel XD Bit (Disabled)
This item enables or disables the Intel XD Bit technology.

Intel EIST (Disabled)
This item allows users to enable or disable the EIST (Enhanced Intel Speedstep Technology) function. This item shows only if the CPU supports EIST.

Intel Virtualization Technol (Enabled)
When enabled, a VMM can utilize the additional hardware capabilities provided by Vandor Pool Technology.

Quick Power on Self Test (Enabled)
Enable this item to shorten the power on testing (POST) and have your system start up faster. You might like to enable this item after you are confident that your system hardware is operating smoothly.

Boot Up Numlock Status (ON)

This item defines if the keyboard Num Lock key is active when your system is started.

APIC Mode (Enabled)

This item allows you to enable or disable the APCI (Advanced Programmable Interrupt Controller) mode. APIC provides symmetric multi-processing (SMP) for systems, allowing support for up to 60 processors.

1st/2nd/3rd Boot Device (CD/DVD/Hard Drive/Remvable Dev.)

Use this item to determine the device order the computer used to look for an operating system to load at start-up time. The devices showed here will be different depending on the exact devices installed on your motherboard.

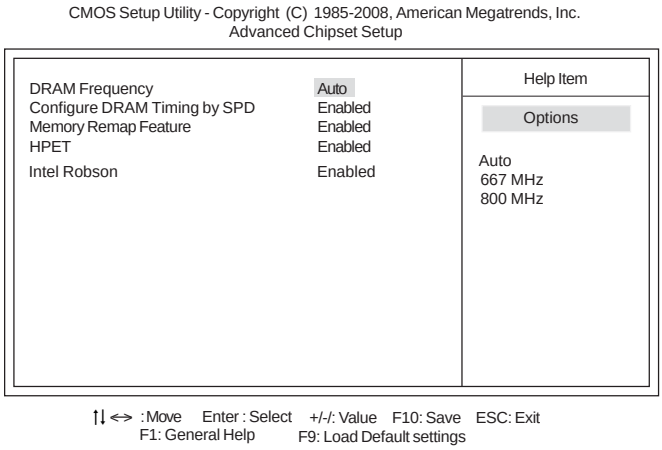
Boot Other Device (Yes)

When enabled, the system searches all other possible locations for an operating system if it fails to find one in the devices specified under the First, Second and Third boot devices.

Press <Esc> to return to the main menu setting page.

Advanced Chipset Setup

This page sets up more advanced information about your system. Handle this page with caution. Any changes can affect the operation of your computer.



DRAM Frequency (Auto)

This item enables users to adjust the DRAM frequency. The defual setting is auto and we recommend users leave the setting unchanged. Modify it at will may case the system to be unstable.

Configure DRAM Timing by SPD (Enable)

When this item is set to enable, the DDR timing is configure using SPD. SPD (Serial Presence Delete) is located on the memory modules, BIOS reads information coded in SPD durinbg system boot up.

Memory Remap Feature (Enabled)

This item allows users to enable or disable memory hole remapping.

HPET (Enabled)

This item enables or disables HPET (High Precision Event Timer) support.

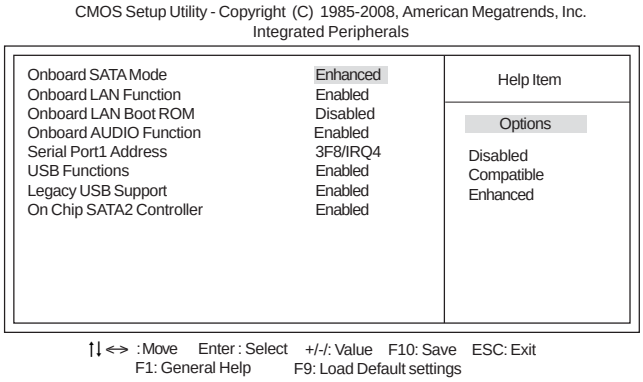
Intel Robson (Enabled)

This item enableds or disables Intel Robson (Intel Turbo Memory Technology) support.

Press <Esc> to return to the main menu setting page.

Integrated Peripherals

This page sets up some parameters for peripheral devices connected to the system.



Onboard SATA Mode (Enhanced)

Use this item to select the mode of the Serial ATA.

Onboard LAN Function (Enabled)

Use this item to enable or disable the onboard LAN function.

Onboard LAN Boot ROM (Disabled)

Use this item to enable or disable the booting from the onboard LAN or a network add-in card with a remote boot ROM installed.

Onboard AUDIO Function (Enabled)

Use this item to enable or disable the onboard Audio function.

Serial Port1 Address (3F8/IRQ4)

Use this item to enable or disable the onboard COM1 serial port, and to assign a port address.

USB Functions (Enabled)

Use this item to enable or disable the USB function.

Legacy USB Support (Enabled)

Use this item to enable or disable support for legacy USB devices.

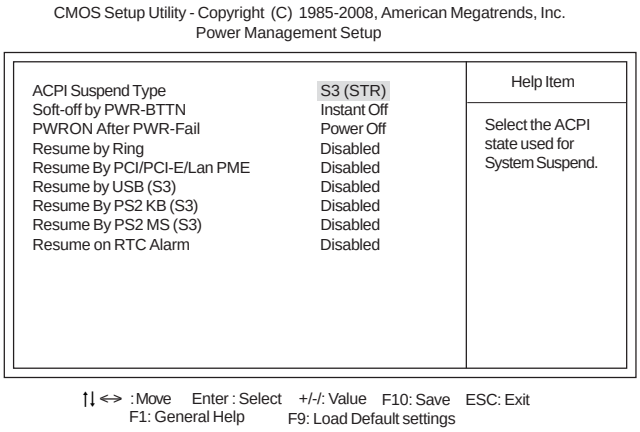
On Chip SATA2 Controller (Enabled)

This item allows you to enable or disable the onchip Serial ATA controller.

Press <Esc> to return to the main menu setting page.

Power Management Setup

This page sets up some parameters for system power management operation.



ACPI Suspend Type (S3)

Use this item to define how your system suspends. In the default, S3, the suspend mode is a suspend to RAM, i.e, the system shuts down with the exception of a refresh current to the system memory.

Soft-off by PWR-BTTN (Instant off)

Under ACPI (Advanced Configuration and Power management Interface) you can create a software power down. In a software power down, the system can be resumed by Wake Up Alarms. This item lets you install a software power down that is controlled by the power button on your system. If the item is set to Instant-Off, then the power button causes a software power down. If the item is set to Delay 4 Sec, then you have to hold the power button down for four seconds to cause a software power down.

PWRON After PWR-Fail (Power Off)

This item enables your computer to power off, automatically restart or return to its previous status after abnormal power lost.

Resume By Ring (Disabled)

The system can be turned off with a software command. If you enable this item, the system can automatically resume if there is an incoming call on the Modem. You must use an ATX power supply in order to use this feature.

Resume By PCI/PCI-E/Lan PME (Disabled)

The system can be turned off with a software command. If you enable this item, the system can automatically resume if there is an incoming call on the PCI Modem or PCI LAN card. You must use an ATX power supply in order to use this feature. Use this item to do wake-up action if inserting the PCI card.

Resume By USB (S3) (Disabled)

This item allows you to enable/disable the USB device wakeup function from S3 mode.

Resume By PS2 KB (S3) (Disabled)
This item enables or disables you to allow keyboard activity to awaken the system from S3 mode.

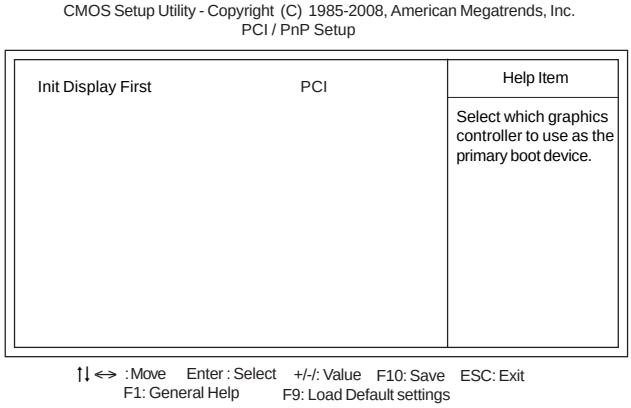
Resume By PS2 MS (S3) (Disabled)
This item enables or disables you to allow mouse activity to awaken the system from S3 mode.

Resume on RTC Alarm (Disabled)
The system can be turned off with a software command. If you enable this item, the system can automatically resume at a fixed time based on the system's RTC (realtime clock). Use the items below this one to set the date and time of the wake-up alarm. You must use an ATX power supply in order to use this feature.

Press <Esc> to return to the main menu setting page.

PCI / PnP Setup

This page sets up some parameters for devices installed on the PCI bus and those utilizing the system plug and play capability.



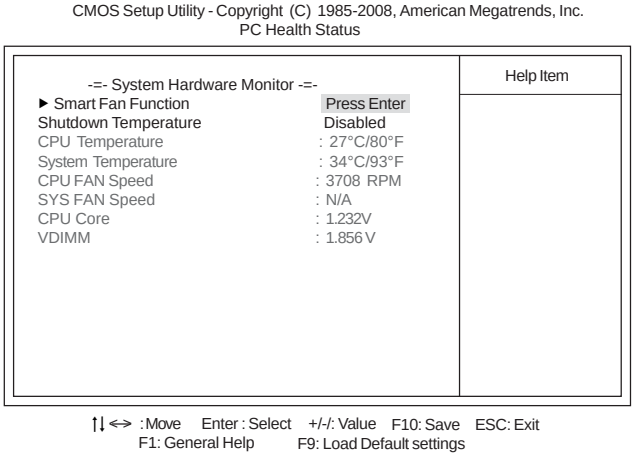
Init Display First (PCI)

Use this item to select which graphics controller to use as the primary boot devices.

Press <Esc> to return to the main menu setting page.

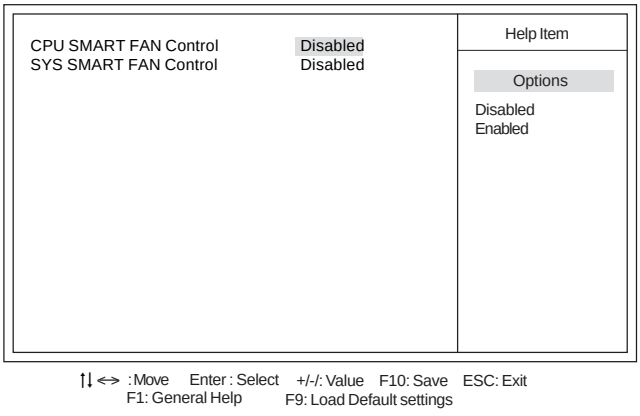
PC Health Status

On motherboards support hardware monitoring, this item lets you monitor the parameters for critical voltages, temperatures and fan speeds.



► Smart Fan Function

Scroll to this item and press <Enter> to view the following screen:



CPU/SYS SMART FAN Control (Disabled)

These items enable you to define the CPU/System temperatur by smartly adjustingthe CPU/System fan. When it is set at certain temperature, the CPU/SYS Fan PWM value will change accordingly.

Press <Esc> to return to the PC Health Status page.

Shutdown Temperature(Disabled)

Enable you to set the maximum temperature the system can reach before powering down.

System Component Characteristics

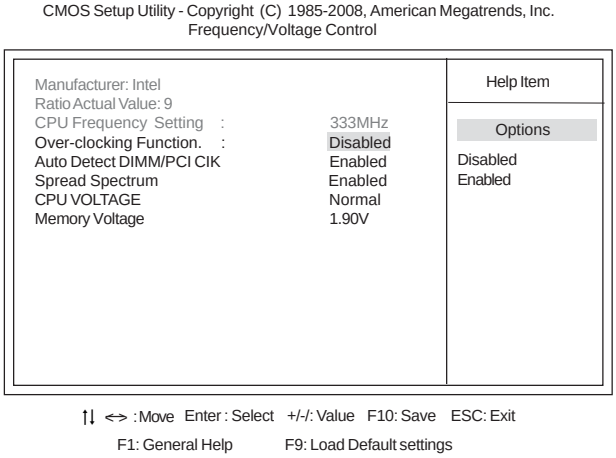
These items display the monitoring of the overall inboard hardware health events, such as System & CPU temperature, CPU & DIMM voltage, CPU & system fan speed,...etc.

- CPU Temperature
- System Temperature
- CPU FAN Speed
- SYS FAN Speed
- CPU Core
- VDIMM

Press <Esc> to return to the main menu setting page.

Frequency/Voltage Control

This page enables you to set the clock speed and system bus for your system. The clock speed and system bus are determined by the kind of processor you have installed in your system.


CMOS Setup Utility - Copyright (C) 1985-2008, American Megatrends, Inc.
Frequency/Voltage Control
Manufacturer: Intel
Ratio Actual Value: 9
CPU Frequency Setting : 333MHz
Over-clocking Function. : Disabled
Auto Detect DIMM/PCI CIK Enabled
Spread Spectrum Enabled
CPU VOLTAGE Normal
Memory Voltage 1.90V
Help Item
Options
Disabled
Enabled
↑↓ <> :Move Enter : Select +/-/: Value F10: Save ESC: Exit
F1: General Help F9: Load Default settings

Manufacturer: Intel

This item displays the information of current manufacturer of the CPU installed in your computer.

Ratio Actual Value: 9

This item shows the actual ratio of the CPU installed in your system.

CPU Frequency Setting (333MHz)

This item is used to set the CPU Frequency.

Over-clocking Function. (Disabled)

This item decides the CPU over-clocking function/frequency installed in your system. If the over-clocking fails, please turn off the system power. And then, hold the PageUp key (similar to the Clear CMOS function) and turn on the power, the BIOS will recover the safe default.

Auto Detect DIMM/PCI Clk (Enabled)

When this item is enabled, BIOS will disable the clock signal of free DIMM/PCI slots.

Spread Spectrum (Enabled)

If you enable spread spectrum, it can significantly reduce the EMI (Electro-Magnetic Interference) generated by the system.

CPU VOLTAGE (Normal)

This item allows users to adjust the CPU voltage.

Memory Voltage (1.90V)

This item allows users to adjust the DDR memory voltage.

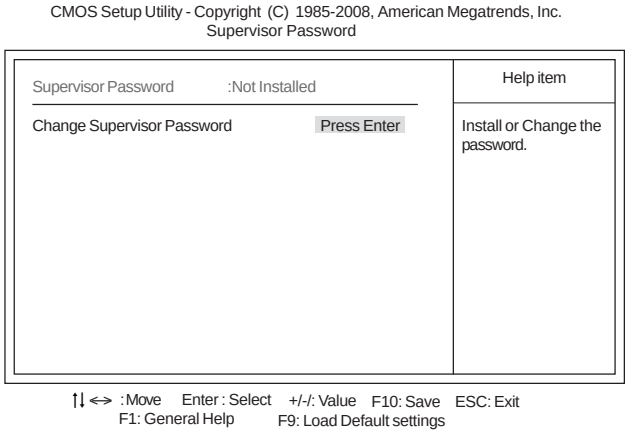
Press <Esc> to return to the main menu setting page.

Load Default Settings

This option opens a dialog box to ask if you are sure to install optimized defaults or not. You select [OK], and then <Enter>, the Setup Utility loads all default values; or select [Cancel], and then <Enter>, the Setup Utility does not load default values.

Supervisor Password

This page helps you install or change a password.



Supervisor Password (Not Installed)

This item indicates whether a supervisor password has been set. If the password has been installed, *Installed* displays. If not, *Not Installed* displays.

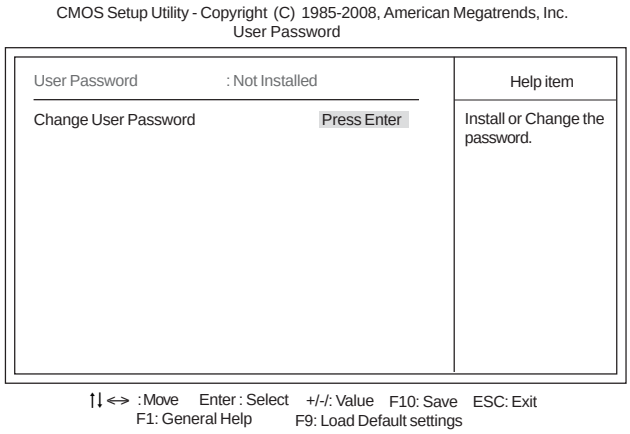
Change Supervisor Password (Press Enter)

You can select this option and press <Enter> to access the sub menu. You can use the sub menu to change the supervisor password.

Press <Esc> to return to the main menu setting page.

User Password

This page helps you install or change a password.


CMOS Setup Utility - Copyright (C) 1985-2008, American Megatrends, Inc.
User Password
User Password : Not Installed
Help item
Change User Password Press Enter
Install or Change the password.
↑↓ <-> : Move Enter : Select +/-/: Value F10: Save ESC: Exit
F1: General Help F9: Load Default settings

User Password (Not Installed)

This item indicates whether a user password has been set. If the password has been installed, *Installed* displays. If not, *Not Installed* displays.

Change User Password (Press Enter)

You can select this option and press <Enter> to access the sub menu. You can use the sub menu to change the user password.

Press <Esc> to return to the main menu setting page.

Save & Exit Setup

Highlight this item and press <Enter> to save the changes that you have made in the Setup Utility and exit the Setup Utility. When the Save and Exit dialog box appears, select [OK] to save and exit, or select [Cancel] to return to the main menu.

Exit Without Saving

Highlight this item and press <Enter> to discard any changes that you have made in the Setup Utility and exit the Setup Utility. When the Exit Without Saving dialog box appears, select [OK] to discard changes and exit, or select [Cancel] to return to the main menu.

If you have made settings that you do not want to save, use the "Exit Without Saving" item and select [OK] to discard any changes you have made.

This concludes Chapter 3. Refer to the next chapter for information on the software supplied with the motherboard.

Chapter 4
Software Setup

Software List

Category	Platform
Intel® Chipset INF	Windows Vista/ XP
Atheros LAN Driver	Windows Vista/ XP
Realtek Audio Driver	Windows Vista/ XP

Attention：
You don’ t need to install the driver for USB 2.0version if you are using Windows® XP with Service Pack 2 (or more advanced).

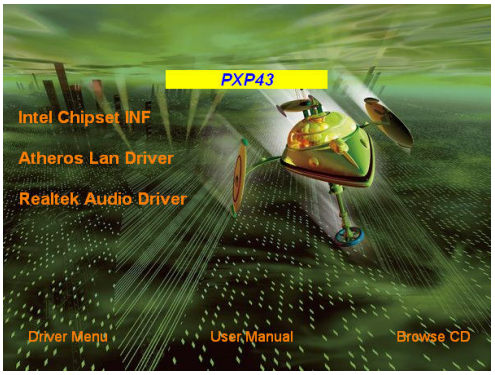
Software Installation

Place the Driver CD into the CD-ROM drive and the Installation Utility will auto-run. You can also launch the Driver CD Installation Utility manually by executing the Intel.exe program located on the Driver CD. (For more details, please refer to the Readme.txt files that in each folder of the Driver.)

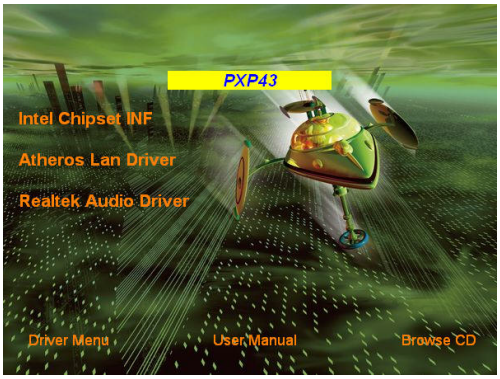
◎ ***The screen and images are only for general reference.The version of the screens you received with your software may vary slightly.***

1. When you insert the driver CD into the CD-ROM, you’ll see the screen as the picture below. There are several driver buttons displayed in the “Driver Menu” screen, and you can click on the drivers to install.

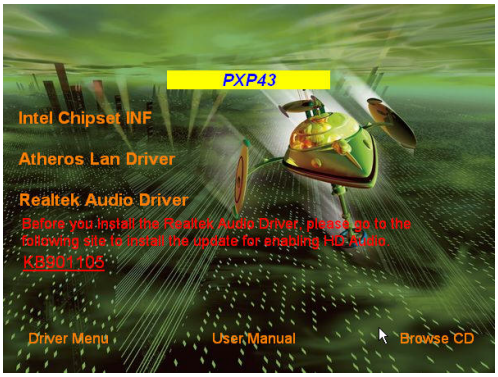
For Windows Vista (64bir) Driver



For Windows Vista Driver

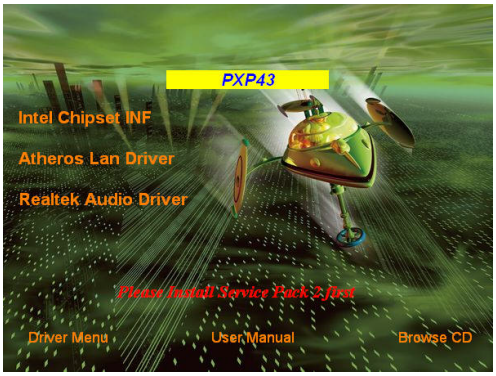


For Windows XP (64bir) Driver


PXP43
Intel Chipset INF
Atheros Lan Driver
Realtek Audio Driver
Before you install the Realtek Audio Driver, please go to the following site to install the update for enabling HD Audio.
KB901105
Driver Menu
User Manual
Browse CD

Attention：
Before you install the Realtek Audio Driver on Windows® XP (64bit) operating system , please go to the Microsoft® website to install the update for enabling HD Audio.

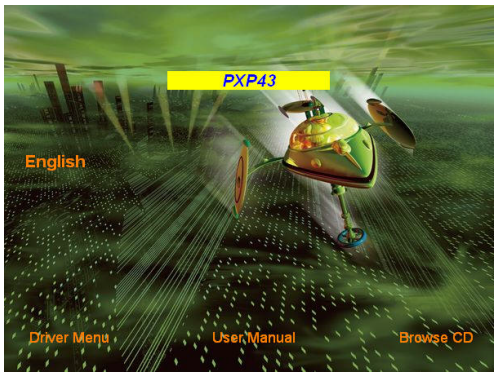
For Windows XP Driver



★ ***Intel Chipset INF –*** It provides all drivers for the functions which built in both the Northbridge/ Southbridge.

- ★ ***Atheros Lan Driver –*** It provides the driver of Atheros Network.
- ★ ***Realtek Audio Driver –*** It provides the driver of Realtek HD Audio CODEC.

2. Click on the "User Manual" button, you can choose the manual to read.



Attention：
Before you read manuals, you must install the driver of Adobe Acrobat Reader 6 to browse PDF files.

3. If you click the "Browse CD" button, you can browse all the files in the Driver CD.